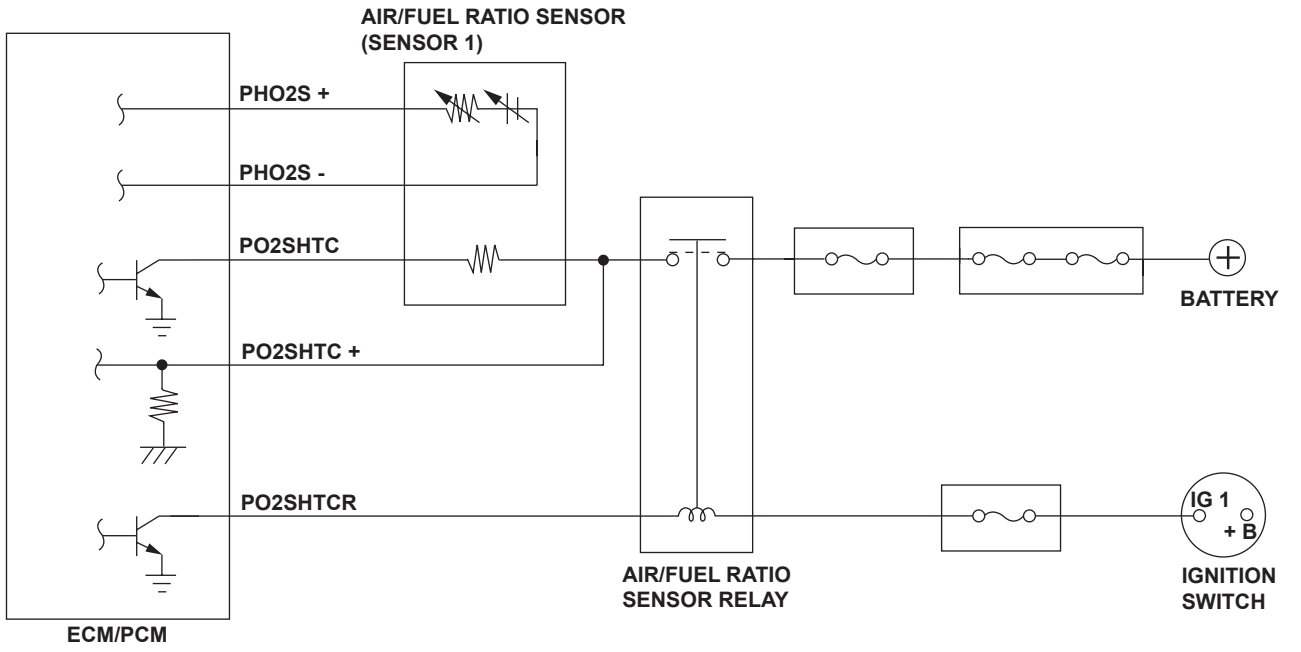
Advanced Diagnostics

DTC P1167: Air/Fuel Ratio (A/F) Sensor (Sensor 1) Heater System Malfunction



P1162-9801

General Description

A heater for the sensor element is embedded in the air/fuel ratio (A/F) sensor (sensor 1) and is controlled by the engine control module (ECM)/powertrain control module (PCM). It is activated and heats the sensor to stabilize and speed the detection of oxygen content when the exhaust gas temperature is cold. The sensor cell resistance decreases as its temperature increases.

If the sensor cell resistance is not less than a set value after the lapse of a specified time period since the heater is turned on, a malfunction is detected and a DTC is stored.

Monitor Execution, Sequence, Duration, DTC Type

Execution	Once per driving cycle
Sequence	None
Duration	60 seconds or more
DTC Type	One drive cycle, MIL ON

Enable Conditions

Condition	Minimum	Maximum
Engine coolant temperature	-4ºF (-20ºC)	—
Battery voltage (IGP terminal of ECM/PCM)	9.7 V	16.0 V
State of the engine	Running	
No active DTCs	A/F Sensor (sensor 1) Heater	

Malfunction Threshold

The sensor cell resistance is 80 Ω or more for at least 60 seconds after the lapse of a specified time period since the heater is turned on.

Diagnosis Details

Conditions for illuminating the MIL
When a malfunction is detected, the MIL comes on and the DTC and the freeze frame data are stored in the ECM/PCM memory.

Conditions for clearing the MIL
The MIL will be cleared if the malfunction does not recur during three consecutive trips in which the diagnostic runs.
The MIL, the DTC, and the freeze frame data can be cleared by using the scan tool Clear command or by disconnecting the battery.